



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/421,086	10/19/1999	YASUSHI KOHNO	2018-265	3625

23117 7590 11/14/2003

NIXON & VANDERHYE, PC  
1100 N GLEBE ROAD  
8TH FLOOR  
ARLINGTON, VA 22201-4714

EXAMINER

DICKENS, CHARLENE

ART UNIT	PAPER NUMBER
----------	--------------

2855

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/421,086

Applicant(s)

KOHNO ET AL.

Examiner

Ex. Dickens

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-16, 18, 29-34 and 44-52 is/are allowed.
- 6) ☒ Claim(s) 1-10, 17, 19-28, & 35-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 19-25, and 35-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrington et al. In regards to claims 1, 19, & 35, Harrington et al. teaches a flow amount measuring apparatus/method comprising: a fluid temperature detector (col.34, line 34) for detecting a fluid temperature; a heater 20 controllable to a first reference temperature which is either one of a fixed temperature and a variable temperature responsive to the fluid temperature detected by the fluid temperature detector (col. 3, lines 46-55); a first and second flow amount temperature detectors (col. 3, line 34) disposed at either one of an upstream side and a downstream side of the heater with respect to a direction of fluid flow and changes its temperature in response to the fluid flow amount and the fluid flow direction (col. 4, lines 9-15); and detecting means (col. 3, lines 59-61) for detecting the fluid flow amount variable with the fluid flow direction from the temperature detected by the fluid amount detector; the detecting means is for producing output corresponding to a difference between the temperature detected by the fluid amount detector and a fixed temperature (col. 3, lines 59-61); the detecting means is for producing an output corresponding to a difference between the temperature detected by the fluid amount detector and the temperature detected by the fluid temperature detector (col. 4, lines 9-15); wherein temperature of the heater at one of an upstream side and a downstream side and another of the upstream side and the

downstream side is lower and higher than the reference temperature (col. 3, lines 59-61), respectively; a substrate 12 on which the fluid temperature detector, the fluid amount detector and the heater are formed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-10, 17, 26-28, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington et al. in view of Yamashita et al. (US Pat 5,936,157).

Claims differ from Harrington et al. with the recitations of: the heater includes a strip which turns at a plurality of points to have a total width larger than that of the fluid temperature detector and the fluid amount detector in the fluid flow direction; a substrate on which the fluid temperature detector, the fluid amount detector and the heater are formed, the substrate having slits at the upstream side of the flow amount detector and the downstream side of the heater; the substrate has cavities at locations underneath the first temperature detector, the heater and the second temperature detector.

Yamashita et al. teaches the heater 4 includes a strip which turns at a plurality of points to have a total width larger than that of the fluid temperature detector and the fluid amount detector in the fluid flow direction; a substrate on which the fluid temperature detector, the fluid amount detector and the heater are formed, the substrate having slits at the upstream side of the flow amount detector and the downstream side of the heater and the substrate has cavities at locations underneath the first temperature detector, the

heater and the second temperature detector (Figs, 2, 4, 6, 8, 10, 12, 14, 16, 20, 22) for the purpose of providing a flow rate detecting element permitting improvements of response to a change in fluid temperature while keeping a high reliability in strength of the fluid temperature measuring element. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the heater includes a strip which turns at a plurality of points to have a total width larger than that of the fluid temperature detector and the fluid amount detector in the fluid flow direction; a substrate on which the fluid temperature detector, the fluid amount detector and the heater are formed, the substrate having slits at the upstream side of the flow amount detector and the downstream side of the heater; the substrate has cavities at locations underneath the first temperature detector, the heater and the second temperature detector in Harrington et al. as taught by Yamashita et al. for the purpose of providing a flow rate detecting element permitting improvements of response to a change in fluid temperature while keeping a high reliability in strength of the fluid temperature measuring element.

Claims 12-16, 18, 29-34 and 44-52 are allowed over the prior art. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach and/or suggest producing an output signal varying as a function of the difference between a temperature detected by the second temperature detector and a reference temperature and the flow direction of fluid passing along the substrate nor the first reference temperature of the heater is controlled to vary with the first temperature detected by the first temperature sensor and the second reference temperature is fixed nor the first temperature detector is connected to the second temperature detector so

that the second temperature detected by the second temperature detector is corrected by the first temperature detected by the first temperature detector in combination with the other recited claimed limitations.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dickens or the supervisor, Edward Lefkowitz, whose telephone numbers are (703) 305-7047 or 305-4816, respectively. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist or the customer service representative whose telephone numbers are (703)

Application/Control Number: 09/421,086


Page 6

Art Unit: 2855

308-0956 or (703) 308-4800 respectively. The fax numbers are (703) 305-3431 and (703) 305-3432.

cd/dickens

11/13/03

  
EDWARD LEFKOWITZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800